Self-assembled monolayer-assisted mass spectrometry

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Résumé en anglais	This article deals with the use of self-assembled monolayers (SAMs) for the formation and characterization of gaseous ions in mass spectrometry (MS). The first part reviews the different results reported in the literature concerning the use of SAMs for surface induced dissociation (SID) of produced ions into a mass spectrometer. In SID/MS, the ion collision at a given kinetic energy allows the accumulation of internal energy for reaching the activation energy of fragmentation reactions. The different chemical structures of SAMs in SID/MS are described and their influence on the amount of the kinetic energy (Ekin) converted into internal energies (Eint) is reported. The second part is dedicated to the implication of SAMs in the laser desorption–ionization (LDI) methods allowing gas-phase ion formation and highlights the specifications required for the SAMs elaboration in the LDI/MS application field. The matrix-free LDI method is more particularly described. The results obtained with the so-called DIAMS technique (desorption–ionization on self-assembled monolayer surface) are reported and the organization and stability of SAMs are pointed out to obtain reliable results in LDI/MS.
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